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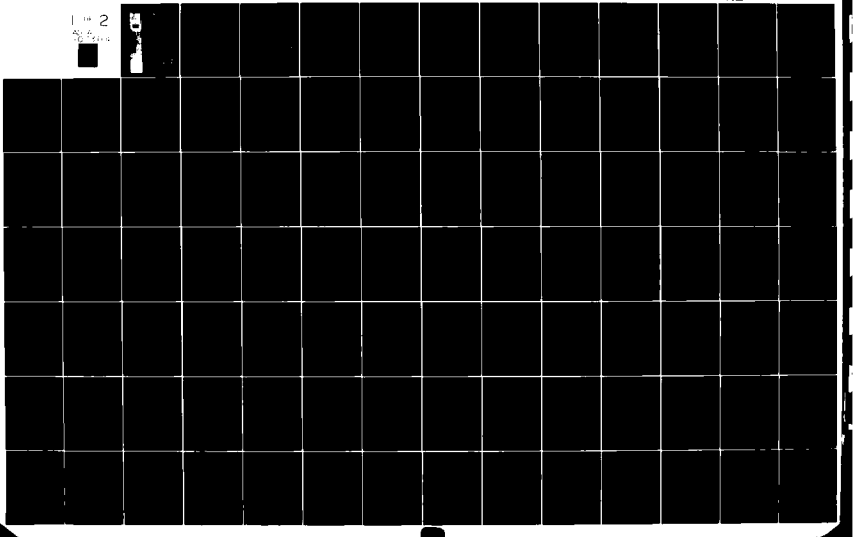

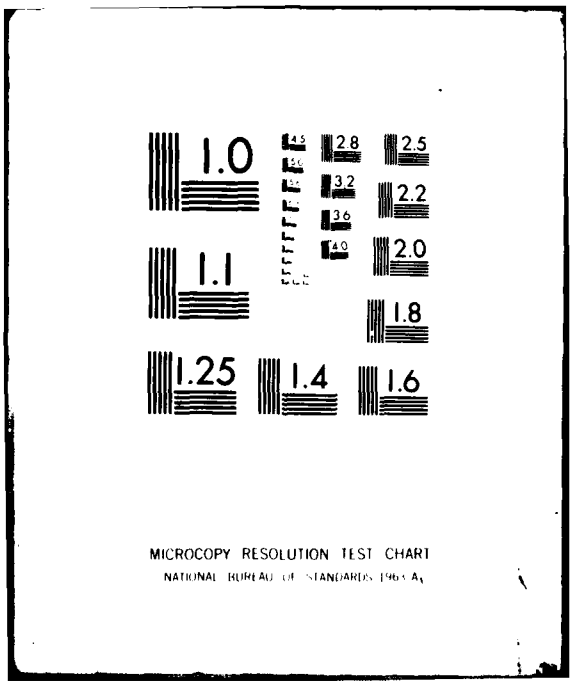
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20. ABSTRACT

This is the Soviet Laser Bibliography for January-February 1977 and is No. 27 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; instrumentation and measurements; beam-target interaction; and plasma generation and diagnostics.

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No. 27

JANUARY - FEBRUARY 1977

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This document was prepared for the Defense Intelligence Agency under an intragovernment agreement. It is intended to facilitate access of government researchers to Soviet laser literature.

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Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is January-February 1977, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are included, as well as entries from the CIRC data base not otherwise covered. Laser items from the popular or semipopular press are generally omitted. The section titled, "Translations," lists currently available translations of laser articles.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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J. PLASMA GENERATION AND DIAGNOSTICS

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III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS

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IV. TRANSLATIONS

A. COMMERCIAL TRANSLATIONS

A number of Soviet journals which contain articles on laser research are routinely translated cover-to-cover by commercial firms. These are generally available from four to twelve months after the original Russian publication appears. The bulk of such translated laser articles will be found in the following journals:

Journal abbreviation	Transliterated title	English translation
FAiO	Akademiya nauk SSSR. Fizika atmosfery i okeana	Izvestiya, Atmospheric and Oceanographic Physics
FTP	Fizika i tekhnika poluprovodnikov	Soviet Physics--Semiconductors
---	Fizika plazmy	Soviet Journal of Plasma Physics
FTT	Fizika tverdogo tela	Soviet Physics--Solid State
IT	Izmeritel'naya tekhnika	Measurement Techniques
IVUZ Radiofiz	Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika	Radio Physics and Quantum Electronics
KE	Kvantovaya elektronika	Soviet Journal of Quantum Electronics
KSpF	Kratkiye soobshcheniya po fizike	Soviet Physics. Lebedev Institute Reports
[illegible]	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy	Inorganic Materials
	[illegible]ptika i spektroskopiya	Optics and Spectroscopy
	[illegible] mekhanicheskaya [illegible]	Soviet Journal of Optical Technology

Journal abbreviation	Transliterated title	English translation
PTE	Pribory i tekhnika eksperimenta	Instruments and Experimental Techniques
RiE	Radiotekhnika i elektronika	Radio Engineering and Electronic Physics
TVT	Teplofizika vysokikh temperatur	High Temperature Physics
UFN	Uspekhi fizicheskikh nauk	Soviet Physics--Uspekhi
ZhETF	Zhurnal eksperimental'noy i tekhnicheskoy fiziki	Soviet Physics--JETP
ZhETF P	Pis'ma v zhurnal eksperimental'noy i tekhnicheskoy fiziki	JETP Letters
ZhPMTF	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki	Journal of Applied Mechanics and Technical Physics
ZhPS	Zhurnal prikladnoy spektroskopii	Journal of Applied *Spectroscopy*
ZhTF	Zhurnal tekhnicheskoy fiziki	Soviet Physics--Technical Physics
ZhTF P	Pis'ma v zhurnal tekhnicheskoy fiziki	Soviet Technical Physics Letters

B. MISCELLANEOUS TRANSLATIONS

A number of laser books and articles in Russian are translated independently by private or government activities and can be obtained from these sources. It should be noted, however, that because of copyright restrictions, not all government-sponsored translations are available to the general public.

The following is a partial list of laser translations for the current interval.

Afanas'yev, Yu.V., N.G. Basov, Ye.G. Gamaliy, O.N. Krokhin and V.B. Rozanov. Physics of laser fusion. Priroda, Moscow, no.10, 1976, 4-16. JPRS no. L/6904, 1977, 90-107.

Akul'shina, L.G., A.F. Dobrovol'skiy, V.A. Krasutskiy, V.K. Mamonov, O.M. Matveyev, V.P. Nikolayev, A.M. Skripkin and G.I. Shchelchkov. Experimental investigation of the fog clearing process using radiation of a CO_2 laser. Trudy instituta eksperimental'noy meteorologii, Moscow, no.5(43), 1974, 52-67. JPRS no. L/7162, 1977, 78-95.

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Mal'sub, Yu.E., T.P. Symera, R.Ya. Syuvala, P.A. Uusmaa, and Kh.V. Khinrikus. Optical communications link at a wavelength of 0.63 micrometers. Elektrosvyaz', Moscow, no.2, February 1977, 26-29. JPRS no. L/7268, 1977, 19-25.

Scientist highlights Soviet achievements in laser research. Muszaki Elet, Budapest, 15 July 1977, p.3. JPRS no. 69558, 20-21.

V. SOURCE ABBREVIATIONS

DAN Arm	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN B	-	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
DAN Uz	-	Akademiya nauk Uzbekskoy SSR. Doklady
EOM	-	Elektronnaya obrabotka materialov
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FiKhOM	-	Fizika i khimiya obrabotka materialov
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
IAN Arm	-	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	-	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Fiz	-	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Khim	-	Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya
IT	-	Izmeritel'naya tekhnika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Gorn	-	Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE	-	Kvantovaya elektronika
KhVE	-	Khimiya vysokikh energiy
KL	-	Knizhnaya letopis'

Kristal	-	Kristallografiya
KSpF	-	Kratkiye soobshcheniya po fizike
NM	-	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	-	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PTE	-	Pribory i tekhnika eksperimenta
RiE	-	Radiotekhnika i elektronika
RZhElektrotekh	-	Referativnyy zhurnal. Elektrotekhnika i energetika
RZhF	-	Referativnyy zhurnal. Fizika
RZhGeofiz	-	Referativnyy zhurnal. Geofizika
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
Sb1	-	Sbornik. Nauchnyye pribory, no. 10, Moskva, 1976.
Sb2	-	Metrologicheskoye obespecheniye izmereniy optiko-fizicheskikh parametrov izlucheniya OKG. Moskva, 1976.
Sb3	-	Vsesoyuznyy simpozium po priboram, tekhnike i rasprostraneniyu millimetrovykh i submillimetrovykh voln v atmosfere. Tezisy dokladov i soobshcheniya. Moskva, 1976.
Sb4	-	Kvantovaya elektronika, no. 10, Kiyev, Naukova dumka, 1976.
Sb5	-	Vsesoyuznyy simpozium po lazernomu zondirovaniyu atmosfery. 4th. Tezisy dokladov. Tomsk, 1976.
Sb6	-	Fizyka dielektrykow i radiospektroskopia. Prace komisji matematyczno-przyrodnicsej Poznanskie towarzystwo przyjaciol nauk, v. 8, no. 1, 1976.
Sb7	-	Akusticheskiy paramagnitnyy rezonans. Kazan', 1976.
Sb8	-	Prace Komisji matematyczno-przyrodnicsej Poznanskie towarzystwo przyjaciol nauk, v. 7, no. 2, 1975.

Sb9	-	Obrabotka i interpretatsiya fizicheskikh eksperimentov, no. 5, Moskva, Moskovskiy universitet, 1976.
Sb10	-	Primeneniye radioelektronnykh priborov v biologii i meditsine. Kiyev, Naukova dumka, 1976.
Sb11	-	Razvedochnaya geofizika, no. 72, Moskva, Nedra, 1976.
Sb12	-	Defekty kristallov. Mezhmolekulyarnyye vzaimodeystviye. Kuzbasskiy politekhnicheskiy institut. Kemerovo, 1976.
Sb13	-	Sposoby zapisi informatsii na besserebryanykh nositelyakh, no. 7, 1976.
Sb14	-	Fizika i tekhnologiya tonkikh plenok slozhnykh poluprovodnikov. Tezisy dokladov 2-go Respublikanskogo soveshchaniya. Uzhgorod, 1975.
Sb15	-	Razvedochnaya geofizika, no. 73, Moskva, Nedra, 1976.
Sb16	-	Nekotoryye voprosy fiziki kinetiki tverdogo tel, no. 2, Cheboksary, 1976.
TKiT	-	Tekhnika kino i televideniya
Tr1	-	Moskovskiy energeticheskiy institut. Trudy, no. 295, 1976.
Tr2	-	Tashkentskiy universitet. Sbornik nauchnykh trudov, no. 499, 1976.
Tr3	-	Trudy metrologicheskikh institutov SSSR. VNII metrologii, no. 193(253), 1976.
Tr4	-	Moskovskiy fiziko-tekhnicheskiy institut. Trudy. Seriya Radiotekhnika i elektronika, no. 10, 1975.
Tr5	-	AN SSSR. Fizicheskiy institut. Trudy, no. 87, 1976.
Tr6	-	Moskovskoye vyssheye tekhnicheskoye uchilishche. Trudy, no. 222, 1976.
Tr7	-	Institut eksperimental'noy meteorologii. Trudy, no. 4(61), 1976.
Tr8	-	Institut eksperimental'noy meteorologii. Trudy, no. 14(59), 1976.
Tr9	-	Moskovskiy energeticheskiy institut. Trudy, no. 288, 1976.

Trl0	-	Permskiy politekhnicheskiy institut. Sbornik nauchnykh trudov, no. 176, 1975(1976).
Trl1	-	VNI kinofotoinstitut. Trudy, no. 82, 1976.
Trl2	-	Gos NI Tsentr izucheniya prirodnyk resursov. Trudy, no. 2, 1976.
Trl3	-	Moskovskiy energeticheskiy institut. Trudy, no. 290, 1976.
Trl4	-	Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 192, 1976.
Trl5	-	VNII transportnogo stroitel'stva. Sbornik nauchnykh trudov, no. 99, 1976.
Trl6	-	VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy. Nauchnyye trudy. Problemy fizicheskoy optiki i metrologii. Moskva, 1975.
Trl7	-	NII prikladnoy matematiki i mekhaniki pri Tomskom universitete. Trudy, no. 7, 1976.
Trl8	-	Moskovskiy institut elektronnoy tekhniki. Sbornik nauchnykh trudov po problemam mikroelektroniki, no. 23, 1976.
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskiy zhurnal
VMU	-	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	-	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhNiPFiK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhTF P	-	Pis'ma v Zhurnal tekhnicheskoy fiziki
ZL	-	Zavodskaya laboratoriya

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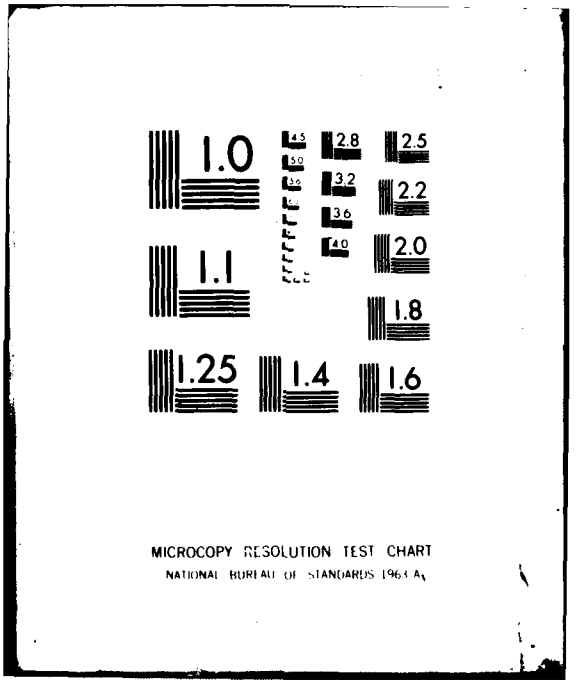
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